



**Research Project Proposal**  
Academic year 2021-2022  
**MÁSTER EN INVESTIGACIÓN BIOMÉDICA**

<b>Project Nº 53</b>	
Title: HLA-G/ILT4 exosomes as a new target in cancer immunotherapy	
Biochemistry Department. Clínica Universidad de Navarra.	
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Summary:  Patient-derived xenograft (PDX) models are a new tool to explore the complexity of human tumor microenvironment and develop more personalized therapies. Additionally, exosomes, a type of extracellular vesicle, are considered a new system of cells communication with functional implications, and therefore a potential biomarker and target. Using cell lines expressing the receptor or ligands of HLA-G/ILT4 pathway we will look to explore the potential role of this pathway as a new target in cancer immunotherapy. Human tumour cell lines will be engrafted in immunodeficient mice, and exosomes will be isolated from the blood of the mice. Isolated exosomes will be used in ex-vivo experiments to assess the effect of these exosomes in the activation and effector functions of human CD8 T cells. In parallel, these exosomes will be also tested in vivo, using humanized-PDX models, where the human tumour microenvironment of a patient will be challenged by intratumoral administration of these exosomes. Furthermore, we will develop a fully humanized model to validate our translational results. Finally, the levels of these exosomes will be assessed in cancer patients, and we will analyse their association with prognosis and response to immune checkpoint inhibitors. Identification of a potential new immune target and its relevance in cancer immunotherapy are the expected fruits of this project.	
yes	X
no	
Does the project include the possibility of supervised animal manipulation to complete the training for animal manipulator?	